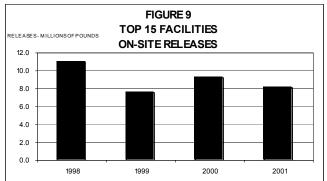


Combined Top 15 Facilities Trend – Figure 9 shows the totals for on-site releases for the top 15 facilities representing over 97% of the total on-site releases. The trend is down 26% since 1998. No adjustments were made to exclude newly-reportable chemicals or facilities in this time period. Additional trends will be presented later in this report.



SPECIAL INTEREST CHEMICAL

Lead and Lead Compounds – The threshold for Lead and lead compounds was reduced to 100 pounds from the previous 25,000 pounds for manufactured and processed and 10,000 pounds otherwise used as noted on page 3. The EPA and others have recognized that lead and lead compounds represent a special hazard and moved to include more facilities in reporting of these PBT chemicals starting with the 2001 reporting year.

HIGHLIGHTS: Exposure to lead can happen from breathing workplace air or dust, eating contaminated foods, or drinking contaminated water. Children can be exposed from eating lead-based paint chips or playing in contaminated soil. Lead can damage the nervous system, kidneys, and reproductive system.

What is Lead?

- Lead is a naturally occurring bluish-gray metal found in small amounts in the earth's crust.
- ➤ Lead can be found in all parts of our environment. Much of it comes from human activities including burning fossil fuels, mining, and manufacturing.

How is Lead Used?

- ➤ Lead has many different uses. It is used in the production of batteries, ammunition, metal products (solder and pipes), and devices to shield X-rays.
- ➤ Because of health concerns, lead from gasoline, paints and ceramic products, caulking, and pipe solder has been dramatically reduced in recent years.

What happens to lead when it enters the environment?

- Lead itself does not break down, but lead compounds are changed by sunlight, air, and water.
- When lead is released to the air, it may travel long distances before settling to the ground.
- Once lead falls onto soil, it usually sticks to soil particles.



- Movement of lead from soil into groundwater will depend on the type of lead compound and the characteristics of the soil.
- Much of the lead in inner-city soils comes from old houses painted with lead-based paint.

How might I be exposed to lead?

- > Eating food or drinking water that contains lead.
- > Spending time in areas where lead-based paints have been used and are deteriorating.
- Working in a job where lead is used.
- > Using health-care products or folk remedies that contain lead.
- > Engaging in certain hobbies in which lead is used (for example, stained glass).

How can lead affect my health?

- ➤ Lead can affect almost every organ and system in your body. The most sensitive is the central nervous system, particularly in children. Lead also damages kidneys and the reproductive system. The effects are the same whether it is breathed or swallowed.
- At high levels, lead may decrease reaction time, cause weakness in fingers, wrists, or ankles, and possibly affect the memory. Lead may cause anemia, a disorder of the blood. It can also damage the male reproductive system. The connection between these effects and exposure to low levels of lead is uncertain.

How likely is lead to cause cancer?

- > The Department of Health and Human Services has determined that lead acetate and lead phosphate may reasonably be anticipated to be carcinogens based on studies in animals.
- > There is inadequate evidence to clearly determine lead's carcinogenicity in people.

How does lead affect children?

- > Small children can be exposed by eating lead-based paint chips, chewing on objects painted with lead-based paint or swallowing house dust or soil that contains lead.
- Children are more vulnerable to lead poisoning than adults. A child who swallows large amounts of lead may develop blood anemia, severe stomachache, muscle weakness, and brain damage. A large amount of lead might get into a child's body if the child ate small pieces of old paint that contained large amounts of lead. If a child swallows smaller amounts of lead, much less severe effects on blood and brain function may occur. Even at much lower levels of exposure, lead can affect a child's mental and physical growth.
- Exposure to lead is more dangerous for young and unborn children. Unborn children can be exposed to lead through their mothers. Harmful effects include premature births, smaller babies, and decreased mental ability in the infant, learning difficulties, and reduced growth in young children. These effects are more common if the mother or baby was exposed to high levels of lead.



How can families reduce the risk of exposure to lead?

- Avoid exposure to sources of lead.
- ➤ Do not allow children to chew or mouth painted surfaces that may have been painted with lead-based paint (homes built before 1978).
- Run your water for 15 to 30 seconds before drinking or cooking with it. This will get rid of lead that may have leached out of pipes.
- Some types of paints and pigments that are used as make-up or hair coloring contain lead.
- > Keep these kinds of products away from children.
- Wash children's hands and faces often to remove lead dusts and soil, and regularly clean the house of dust and tracked in soil.

Is there a medical test to show whether I've been exposed to lead?

A blood test is available to measure the amount of lead in your blood and to estimate the amount of your exposure to lead. Blood tests are commonly used to screen children for lead poisoning. Lead in teeth and bones can be measured with X-rays, but this test is not as readily available. Medical treatment may be necessary in children if the lead concentration in blood is higher than 45 micrograms per deciliter (0.1 liter), or (45 μg/dL).

Has the federal government made recommendations to protect human health?

- The Centers for Disease Control and Prevention (CDC) recommends that children ages 1 and 2 be screened for lead poisoning. Children who are 3 to 6 years old should be tested for lead if they have never been tested for lead before and if they receive services from public assistance programs; if they live in or regularly visit a building built before 1950; if they live in or visit a home built before 1978 that is being remodeled; or if they have a brother, sister, or playmate who has had lead poisoning. CDC considers children to have an elevated level of lead if the amount in the blood is 10 μg/dL.
- The EPA requires lead in air not to exceed 1.5 micrograms per cubic meter (1.5 μg/m³) averaged over 3 months. EPA limits lead in drinking water to 15 μg per liter.
- ➤ The Occupational Health and Safety Administration (OSHA) developed regulations for workers exposed to lead. The Clean Air Act Amendments of 1990 banned the sale of leaded gasoline. The Federal Hazardous Substance Act bans children's products that contain hazardous amounts of lead.

Source of Information for this Section

Agency for Toxic Substances and Disease Registry (ATSDR). 1999. Toxicological profile for lead. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.



Common Toxic Chemicals and their Hazards

The top 15 chemicals reported released to air, water, and/or land are presented here in descending order of amount released on-site (see Figures 5-7 on pages 11-13). This information is presented as a quick reference summary of information for these toxic chemicals. This is not a detailed source of information on the sources, uses, or hazards of these chemicals. This information was obtained from the *DNREC Chemical Data Fact Sheets* and the *Hazardous Substance Fact Sheets* provided by the New Jersey Department of Health and distributed by the EPA. The source for this information is listed in the *For Further Information* section in pages 41-42 of this report. The reader may also consult other chemical or toxicology reference materials to learn more about chemicals of interest. Excerpts for Nitrate Compounds came from EPA *The National Nitrate Compliance Initiative*, April 2002. Excerpts for metallic compounds came from EPA *Risk Burn Guidance for Hazardous Waste Combustion Facilities*.

AIR - From Figure 5 on page 11

Hydrochloric Acid: (Aerosol portion only is reportable)

Used in: Metal processing and cleaning, analytical chemistry, and making other chemicals. Hazard: Corrosive. Can cause skin and eye burns, irritation of mouth, nose and throat.

Sulfuric Acid: (Aerosol portion only is reportable)

Used in: Fertilizers, chemicals, dyes, petroleum refining, etching, analytical chemistry, metal manufacturing, and explosives.

Hazard: Corrosive. Can cause skin and eye burns, irritation of mouth, nose and throat.

Xylene – Mixed Isomers

Used in: Solvents and in making drugs, dyes, insecticides, and gasoline.

Hazard: Can irritate the eyes, nose, and throat. Toxic by inhalation and ingestion. May cause memory and concentration problems. Repeated exposure may cause low blood cell count.

Certain Glycol Ethers

Used in: Solvents.

Hazard: Can irritate the eyes, nose, and throat and skin, toxic by inhalation and ingestion or skin absorption.

Hydrogen Fluoride

Used in: Etching glass, manufacturing chemicals and gasoline.

Hazard: Corrosive. Can cause severe irritation to the eyes, nose, and throat and skin, toxic by inhalation and ingestion or skin absorption.

Carbonyl Sulfide

Used in: Chemical manufacturing

Hazard: Can irritate the eyes, nose, and throat and skin, toxic by inhalation and ingestion or skin absorption. High exposure may cause nausea dizziness, confusion, vomiting, increased or irregular heartbeat.



Vinyl Chloride

Used in: Plastics and chemical manufacturing

Hazard: Carcinogen, mutagen. Toxic by inhalation and ingestion or skin absorption. May cause damage to developing fetus. May damage liver, kidneys, bones, blood vessels, and skin. Exposure may cause you to feel drowsy or lightheaded.

Ammonia

Used in: Refrigerant, in manufacturing fertilizer, plastics, dyes, and textiles.

Hazard: May irritate lungs, eyes, nose, throat, and mouth. Contact with liquid can burn skin.

N-Butyl Alcohol

Used in: Solvent for fats, resins, waxes, gums, shellac and varnish. Also used in manufacture of chemicals and oils.

Hazard: Toxic by inhalation and ingestion or skin absorption. May irritate and damage skin and eyes on contact. Breathing high concentrations can cause coughing, wheezing and shortness of breath, can cause headache, nausea, vomiting and dizziness, and may lead to an irregular heartbeat. Exposure can damage the liver, heart, kidneys, hearing and the sense of balance.

1,2,4,-Trimethylbenzene

Used in: Manufacture of dyes, pharmaceuticals.

Hazard: Toxic when inhaled and by skin contact. Can irritate the nose, throat and eyes. Contact can irritate the skin. Prolonged contact may cause skin burns. Repeated exposure may damage the liver and kidneys.

Toluene

Used in: Solvent for perfumes, medicines, dyes, explosives, detergents gasoline and chemicals.

Hazard: Toxic when inhaled, ingested, and by skin contact. It may damage the developing fetus. Contact can irritate the skin and eyes. Breathing toluene can irritate the nose and throat causing coughing and wheezing. Exposure can affect the nervous system causing trouble concentrating, headaches and slowed reflexes. Repeated Toluene exposure may cause liver, kidney and brain damage. Highly flammable and explosive.

Methyl Tert-Butyl Ether

Used in: Octane booster in gasoline, and gasoline extender.

Hazard: Highly flammable and can irritate the eyes, skin, nose, throat and lungs.

Methanol

Used in: Solvents, cleaners,

Hazard: Toxic when inhaled, ingested, or by skin contact. Exposure may cause blindness, nausea, headaches, vomiting, and dizziness. Flammable and a fire hazard.

N-Hexane

Used in: Chief constituent of petroleum ether, gasoline, and rubber solvents. Also used in solvents for adhesives, in organic analysis, and in denaturing alcohols.

Hazard: Toxic when inhaled, ingested, or by skin contact. Exposure can cause

lightheadedness, giddiness, headaches and nausea. Flammable liquid and a fire hazard.



Methyl Ethyl Ketone

Used in: Solvents and in making plastics, textiles, and paints.

Hazard: Toxic by inhalation and ingestion. Exposure to the vapor can irritate the eyes, nose, mouth, and throat. Repeated exposure can damage the nervous system and may affect the brain. Flammable liquid and a fire hazard.

WATER - From Figure 6 on page 13 - Chemicals not reported in the Air section above

Nitrate & Nitrite Compounds

Nitrates are toxic chemicals that can pose serious risks to human health and the environment. High levels of nitrates may cause significant environmental damage to streams, lakes, and rivers. Elevated levels of nitrate may damage surface water and ground water with excess nutrients and can cause algae blooms in coastal waters, which can remove oxygen from the water and result in fish kills. The National Academy of Sciences recently reported that pollution by nitrogen and phosphorous were causing damage in most of the nation's coastal inlets, and severe problems were identified in 44 of the 139 coastal areas examined.

Manganese Compounds *

Used in: Dry-cell batteries, matches, fireworks, and the production of other manganese compounds, in animal feed, fertilizer, livestock nutritional supplement, in glazes and varnishes, and in ceramics, for water purification purposes in water and waste-treatment plants. Hazard: Toxic when Inhaled.

Vanadium Compounds *

Used in: Steel alloys, other Vanadium compounds, x-ray equipment, sulfuric acid, and synthetic rubber.

Hazard: Toxic when inhaled. Can irritate skin, nose, throat and lungs

Copper and Copper Compounds *

Used in: Electrical wiring, plumbing, fungicides, pesticides, electroplating, paint pigments and catalysts.

Hazard: Toxic when inhaled. Can irritate the eyes, nose and throat. May cause a skin allergy. Repeated high exposure to copper can affect the liver.

Zinc and Zinc Compounds *

Used in: Rustproof coating on iron and steel, making brass alloys, car parts, electroplating, batteries, electrical products, paints, and fungicides.

Hazard: Zinc Oxide Fumes (released during welding on galvanized metal) are toxic when inhaled. Zinc dust is a skin irritant.

Benzene

Used in: Used to make other chemicals which are used to make plastics, resins, and nylon and synthetic fibers. Also used to make some types of rubbers, lubricants, dyes, detergents, drugs, and pesticides. Benzene is also a natural part of crude oil, gasoline, and cigarette smoke.

Hazard: Benzene is a carcinogen. Toxic when inhaled or ingested. Exposure to high levels can cause drowsiness, dizziness, rapid heart rate, headaches, tremors, confusion, and unconsciousness.



Barium and Barium Compounds *

Used in: Spark plugs and engine rod bearings, and to remove gas from vacuum tubes and television picture tubes.

Hazard: Toxic when inhaled, may irritate skin, eyes, nose and throat.

Lead and Lead Compounds *

Used in: Storage batteries, ammunition, cable covering, ceramic glazes, casting metals and solders.

Hazard: Toxic by ingestion. Can cause brain damage, particularly in children, suspected carcinogen. Additional detail starting on page 21.

Nickel and Nickel Compounds *

Used in: Alloys and electroplating, catalysts, dyes, and textile printing.

Hazard: Carcinogenic. Toxic by inhalation. Eye and skin irritant. Repeated exposure may cause scarring of the lungs and may affect the kidneys.

Molybdenum Trioxide *

Used in: Agriculture, making other Molybdenum compounds, ceramic glazes, enamels, pigments, and in analytical chemistry.

Hazard: Toxic when inhaled, may irritate the nose throat and bronchial tubes. Repeated overexposure may cause weight loss, diarrhea, poor muscle coordination, headaches, and muscle or joint pain.

Chromium Compounds *

Used in: Stainless and alloy steels, refractory products, tanning agents for leather, pigments, electroplating, catalysts, and corrosion-resistant products.

Hazard: Irritant and corrosive to human tissue, chromium compounds are carcinogens. Hexavalent compounds are more toxic than trivalent compounds.

* These metallic compounds are usually by-products produced from impurities in the fuel associated with coal or oil combustion and/or ore processing.

Ethlybenzene

Used in: Ethylbenzene is used primarily to make another chemical, styrene. Other uses include as a solvent, in fuels, and to make other chemicals.

Hazard: Toxic by inhalation, will irritate eyes, nose throat, and skin. Exposure may cause dizziness, lightheadedness, and breathing difficulty.

LAND – From figure 7 on page 13 - Chemicals not reported in the Air and/or Water sections above

Mercury and Mercury Compounds

Used in: Thermometers, barometers, vapor lamps, mirror coatings, and in making chemicals and electrical equipment.

Hazard: The nervous system is very sensitive to all forms of mercury. Methylmercury and metallic mercury vapors are more harmful than other forms, because more mercury in these forms reaches the brain. Exposure to high levels of metallic, inorganic, or organic mercury can permanently damage the brain, kidneys, and developing fetus. Effects on brain functioning may result in irritability, shyness, tremors, changes in vision or hearing, and memory problems.



Hexachlorobenzene

Used in: Currently, hexachlorobenzene is not used commercially in the United States. It does not occur naturally in the environment. It is formed as a by-product during the manufacture of other chemicals. Small amounts can also be produced during combustion of municipal waste. Hazard: Possible carcinogen. Toxic by ingestion, normally appears in solid form.

Cobalt Compounds *

Used in: Cobalt is used in steel alloys and jet engines, in nuclear technology, and in cemented carbide abrasives and tools. It is a component in vitamin B12

Hazard: Possible carcinogen. Toxic by inhalation, is a skin irritant. Exposure can irritate the lungs and skin. Repeated exposure to the metal dust can cause scarring of the lungs. Normally appears as dust or solid form.

* These metallic compounds are usually by-products produced from impurities in the fuel associated with coal or oil combustion and/or ore processing.

Off-Site Transfers

Off-site transfers are material transfers to off site locations for the purpose of disposal, recycling, energy recovery, treatment or to publicly owned treatment works (POTW's), typically, wastewater treatment plants.

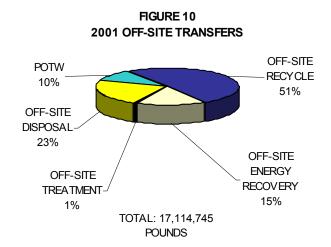


Figure 10 shows the relative portions transferred to the five off-site transfer categories, and Table 4 on page 7 shows these values in tabular form. Appendices D and G provide additional detail. TRI Chemicals in wastes are transported by various means through Delaware to their final destinations, many of which are out of state. TRI chemicals were sent to 22 states, some as far away as Arizona, Texas and Utah. About 84% of TRI chemicals in wastes were sent to an out of state location for further processing and/or disposal.

Off-site transfer to recycle operations accounted for more than half of the amounts in these five categories, and disposals accounted for almost another quarter of the transfers. Over 90 percent of the transfers to POTW's were to the City of Wilmington POTW. Note that the pounds recycled (Table 4 on page 7) is greater than all on-site releases, and the total amount transferred off-site is over 2 times the amount of on-site releases. Off-site transfers account for 15 percent of the total TRI wastes.

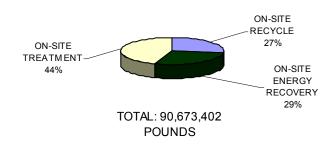


On-Site waste Management

On-Site Waste Management is the amount of wastes that never leave the facility site and are managed by the facility on-site. The total amount of TRI chemicals managed on-site is 78

percent of the total TRI chemical waste. The categories of Recycle, **Energy recovery, and Treatment** are used to define the on-site management of TRI chemical Figure 11 shows the wastes. portions of these wastes processed on-site. Appendices D and G provide additional detail about waste management of these chemicals. Recycled waste is the quantity of the toxic material recovered at the facility and made available for further use. Energy

FIGURE 11
2001 ON-SITE WASTE MANAGEMENT



Recovery includes the quantity of toxic material that had heat value and was combusted in some form of energy recovery device such as a furnace. The **Waste Treatment** segment includes the amount of toxic material that was destroyed in on-site waste treatment operations.

Total Waste

Total waste is the combined total of the on-site release. off-site transfer, and on-site waste management portions of the TRI chemical report. Figure 12 provides perspective of the total TRI chemical waste picture in Delaware. Over three guarters of the total TRI chemical wastes in Delaware are managed on-site through treatment, energy recovery, and recycle operations by the facility generating the waste.

FIGURE 12 2001 TRI CHEMICAL MANAGEMENT TOTAL: 116,094,330 POUNDS

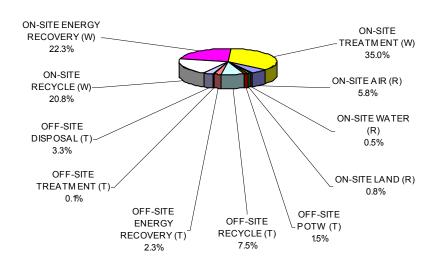


Figure 12 key

- (R) On-Site Release
- (T) Off-Site Transfer
- (W) On-Site Waste Management



Receiving TRI chemicals in Wastes

When a facility transfers TRI chemical waste off-site, these wastes go to a receiving facility. Some of these facilities report to the TRI program as well, but many do not, based on the reporting requirements shown on pages 1 and 2. Less than one percent of the TRI chemical wastes transferred to Delaware facilities is transferred to a TRI reporting facility. Table 9 provides the total amounts of TRI chemicals received by Delaware facilities from in-state and out-of-state facilities. This data is separated into wastes transferred from other Delaware facilities and wastes transferred from out-of-state facilities. DNREC does not receive reports from any out-of-state facilities that transfer wastes into Delaware. This data was obtained from the U. S. EPA. Some changes may have occurred since the date of this data.

TABLE 9 SUMMARY OF TRANSFERS IN 2001 TRI CHEMICALS TRANSFERRED TO DELAWARE FACILITIES FROM OTHER FACILITIES

(in pounds)

RECEIVING FACILITY	TOTAL TRANSFERS FROM DELAWARE FACILITIES (DE DATA) (1)	TOTAL TRANSFERS FROM OUT OF STATE (EPA DATA) (2)	TOTAL TRANSFERS RECEIVED BY DELAWARE FACILITIES
ASHWORKS DELAWARE	0	249	-
CLEAN EARTH	0	1,386	· ·
CUSTOM ENVIRONMENTAL TRANSPORT	0	2,000	2,000
D & D DISMANTLING	42,060	0	42,060
DE RECLYCABLE PRDUCTS	297	0	297
DSWA CHERRY ISLAND	34,843	0	34,843
DSWA LAMBSON LANE	9,727	0	9,727
DSWA SANDTOWN	1,096		1,096
DUPONT CHERRY ISLAND	2,283,313		2,283,313
DUPONT EXPERIMENTAL STATION	0	635,441	635,441
GENERAL CHEMICAL *	3,671	0	3,671
INDIAN RIVER POWER PLANT *	382	0	382
INDUSTRIAL RESOURCE NETWORK	344	1,396	·
INTERNATIONAL PETROLEUM CORP.	0	73,252	*
KENT COUNTY TREATMENT PLANT	1,576	0	1,576
MILLSBORO TREATMENT PLANT	1	0	1
MOT TREATMENT PLANT	15	0	15
NEW CASTLE DEPT. OF PUBLIC WORKS	33,955		33,955
PIGEON POINT LANDFILL	22,420	·	22,420
SEAFORD MUNICIPAL TREATMENT PLANT	1,466		1,466
SELBYVILLE TREATMENT PLANT	10,435	0	10,435
UNIQEMA *	19,838	0	19,838
VFL TECHNOLOGY CORPORATION	0	11,048	·
WILMINGTON WASTEWATER PLANT	1,527,983	,	1,532,518
TOTAL TRANSFERS RECEIVED	3,993,423	729,307	4,722,730

⁽¹⁾ Source: DNREC TRI Database 2001 Data, 3-1-2003

The top receiving facility is the DuPont Cherry Island facility; receiving ore processing waste from the DuPont Edge Moor facility which contained 14 of its 20 TRI reported chemicals, and the DaimlerChrysler facility. The second largest amount of off-site TRI chemicals in waste was received by the Wilmington Wastewater Treatment Plant, receiving 35 chemicals from 11 facilities. The third largest receiver of TRI chemicals in wastes was the DuPont Experimental Station, receiving wastes from eight other out of state DuPont facilities.

⁽²⁾ Source: U.S.EPA 2001 TRI Data Run,12-31-2002

^{*} TRI Reporting Facility



Persistent Bioaccumulative Toxic (PBT) Chemicals

Persistent Bioaccumulative Toxics (PBT's) are receiving increased scrutiny as we learn more about them, and reporting PBT's is also being emphasized to an increasing degree. These chemicals are of particular concern because they are not only toxic, but because they remain in the environment for long periods of time, are not readily destroyed, and build up and accumulate in body tissues. The EPA established substantially lower reporting thresholds in 2000 for 15 chemicals and three categories that are highly persistent and bioaccumulative in the environment. Starting in 2001, lead and lead compounds (except lead contained in stainless steel, brass, or bronze alloys) have reduced thresholds of 100 pounds. A more detailed discussion of lead and lead compounds appears starting on page 21. Table 2 on page 3 shows the new, lower thresholds for all PBT's. Therefore, not all of the PBT chemicals released in prior years were reportable, even though they were likely released at or near the current reported rate. For example, twenty one facilities reported lead or lead compounds in 2001 compared to seven in 2000.

Table 10 shows the results of PBT reporting for 2000 and 2001, compared to total 2001 data. The reduced thresholds for lead and lead compound reporting can readily be seen in the on-site releases. Even though the total PBT waste is slightly lower in 2001, all the increases in the air, water, and land amounts in 2001 are due to increased lead and lead compound reporting.

Table 11 on the next page shows the amounts of each PBT chemical reported released by the TRI reporting facilities in 2001. Lead and lead compounds, reported at 28,830 pounds with their lower thresholds for 2001, make up over 90% of the total on-site releases, and make up an even greater portion of the transfers off-site and on-site waste as well.

Dover Air force Base small arms range was the top reporter for on-site lead release, and the Indian River Power Plant was the top reporter for on-site lead compounds release. Both facilities reported these releases to land. Johnson Controls Battery

TABLE 10 2001 PBT DATA SUMMARY

(IN POUNDS)

	All Data	PBT's only	PBT's only
	2001	2001	2000
No. of facilities	80	23	23
No of Form A's	57	0	0
No of Form R's	311	65	51
No. of Chemicals	104	12	12
On-site Releases			
Air	6,766,580	5,915	3,231
Water	573,937	3,659	255
Land	965,666	21,852	143
Total Releases	8,306,183	31,426	3,629
Off-site Transfers			
POTW's	1,697,026	521	772
Recycle	8,725,054	4,570,954	4,660,197
Energy Recovery	2,642,626	0	0
Treatment	172,946	0	1,202
Disposal	3,877,093	61,680	51,959
Total Transfers	17,114,745	4,633,155	4,714,130
On-site Waste Mgmt.			
Recycle	24,133,870	8,150	7,920
Energy Recovery	25,863,740	210	371
Treatment	40,675,792	400	1,700
Total on-site Mgmt.	90,673,402	8,760	9,991
Total Waste	116,094,330	4,673,341	4,727,750



Group again reported the top amount of lead transferred off-site, to recycling. Dover Air force Base and Indian River Power Plant reported on lead and lead compounds for the first time in 2001. Johnson controls has been reporting on lead compounds since 1987.

TABLE 11 2001 PBT RELEASE SUMMARY

(IN POUNDS)

	ON-SITE RELEASES					
	TOTAL	TOTAL	TOTAL		TRANSFERS	ON-SITE
CHEMICAL	AIR	WATER	LAND	TOTAL	OFF-SITE	WASTE MGMT.
BENZO(G,H,I)PERYLENE	1	2	0	3	0	190
DIOXIN AND DIOXIN-LIKE COMPOUNDS (1)	0	0	13	13	156	0
HEXACHLOROBENZENE	0	52	99	151	672	0
LEAD	2	41	2,958	3,001	1,554	0
LEAD COMPOUNDS	3,808	3,526	18,495	25,829	4,625,358	350
MERCURY	1,068	20	0	1,088	4,374	7,800
MERCURY COMPOUNDS	414	0	215	629	260	0
OCTACHLOROSTYRENE	0	0	42	42	508	0
PENTACHLOROBENZENE	0	16	30	46	201	0
POLYCHLORINATED BIPHENYLS	0	0	0	0	71	0
POLYCYCLIC AROMATIC COMPOUNDS	622	2	0	624	0	420
TETRABROMOBISPHENOL A	0	0	0	0	0	0
TOTALS	5,915	3,659	21,852	31,426	4,633,155	8,760

Source: 2001 DNREC Database March 1, 2003

Mercury and mercury compounds combined for first place last year, and remained relatively unchanged this year, but fell to third with the inclusion of more lead reports this year. Occidental chemical reported again the top amount of on-site PBT chemical waste management, with mercury being recycled on-site, and was the sole contributor to the 1,088 pounds of mercury released on-site. Appendix I Shows the PBT data detail, listing all the facilities reporting each PBT chemical.

NATIONAL PERSPECTIVE

The national 2001 TRI report has not been released by the U.S. Environmental Protection Agency (EPA) as of the writing of this report. However, placing the 2001 Delaware reports alongside the 2000 EPA reports yields some rankings which provide a perspective for Delaware in the national TRI picture. Changes in the 2001 national values may change these rankings.

This data shows that Delaware ranks 46th in the nation in total on-site releases for all TRI chemicals. For on-site releases, 90 facilities in the nation each released more individually than all the facilities in Delaware combined.

Some facilities in Delaware do rank at or near the top of the national ranking for specific releases. DuPont Edge Moor ranks #1 in the nation for off-site transfer and #3 for on-site release of dioxin and dioxin-like compounds. Formosa Plastics ranks #2 in the nation for on-site release of vinyl chloride. Motiva ranks #8 for on-site release of methyl tert-butyl ether. Occidental Chemical ranks 14th in the nation for on-site release of mercury.

⁽¹⁾ Dioxins are reportable in grams and have been converted to pounds.



TREND ANALYSIS

TRI data is available back to 1987. Changes in the reporting requirements over time have caused an increase in both the number of chemicals and the types of facilities subject to reporting. As explained on pages 2-4, two of the most significant changes to TRI reporting occurred in 1995 and 1998, when large increases in chemicals (1995) and facilities subject to reporting (1998) occurred. The analysis presented in this section uses 1995 and 1998 as base years for presenting trends for all chemicals (not adjusted) and for only chemicals and facilities subject to reporting over the entire time span (adjusted). Table 12 and Figure 13 show the results of reporting during the 1995-2001 time period and are not adjusted for any changes in reporting requirements.

TABLE 12
1995-2001 TRI DATA SUMMARY
NOT ADJUSTED
(IN POUNDS)

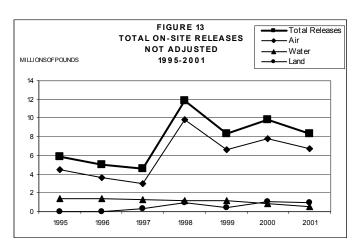
	1995	1996	1997	1998	1999	2000	2001
No. of facilities	75	77	74	80	76	77	80
No of Form A's	33	40	34	75	72	61	57
No of Form R's	228	220	242	277	254	302	311
No. of Chemicals	90	98	100	106	101	108	104
On-site Releases							
Air	4,483,402	3,586,182	2,995,461	9,796,431	6,651,166	7,840,007	6,766,580
Water	1,394,739	1,395,328	1,328,937	1,126,527	1,197,861	866,312	573,937
Land	28,678	42,409	317,243	937,708	462,579	1,103,632	965,666
Total Releases	5,906,819	5,023,919	4,641,641	11,860,666	8,311,606	9,809,951	8,306,183
Off-site Transfers							
POTW's	3,270,800	4,575,131	4,354,095	3,334,302	2,996,401	2,199,807	1,697,026
Recycle	17,127,835	10,054,483	10,612,518	12,002,926	9,295,315	8,491,115	8,725,054
Energy Recovery	2,427,102	1,173,331	1,663,440	1,491,543	1,389,936	2,539,369	2,642,626
Treatment	910,090	1,297,004	688,661	630,761	894,822	901,604	172,946
Disposal	2,767,339	2,905,928	4,010,594	3,983,506	3,056,466	3,814,612	3,877,093
Total Transfers	26,503,166	20,005,877	21,329,308	21,443,038	17,632,940	17,946,507	17,114,745
On-site Waste Mgmt.							
Recycle	29,100,208	29,882,121	32,996,062	34,549,050	32,671,856	31,188,694	24,133,870
Energy Recovery	332,834	219,184	19,255,280	16,155,665	22,981,591	29,095,221	25,863,740
Treatment	55,990,904	51,590,060	69,425,233	68,475,327	69,501,151	64,404,879	40,675,792
Total on-site Mgmt.	85,423,946	81,691,365	121,676,575	119,180,042	125,154,598	124,688,794	90,673,402
Total Waste	117,833,931	106,721,161	147,647,524	152,483,746	151,099,144	152,445,252	116,094,330

NOT ADJUSTED FOR CHANGES IN REPORTING REQUIREMENTS

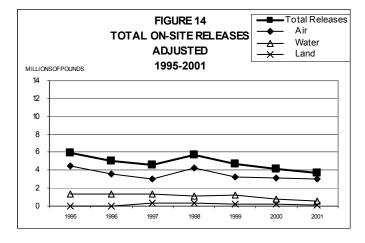
SOURCE: DNREC 2001 DATABASE, MARCH 1, 2003

On-Site Releases 1995-2001

On-site releases include emissions to the air, discharges to bodies of water, and releases at the facility to land including placement in on-site landfill. Figure 13 shows the trend of on-site releases without adjustments. The increase in 1998 is due to the change in reporting requirements as explained on page 3 with the large increase in the number of facilities required to report. When the new facilities and chemicals that were added starting after 1995 are removed







from the trends, the adjusted result is shown in Table 13 and Figure 14. The amount of on-site chemicals removed by this adjustment increased to 6.2 million pounds in 1998, up from 21,800 pounds in 1997 and is now at 4.6 million pounds for 2001. Facilities such as the power plants and chemicals such as PBT's at their lower thresholds are not shown in the adjusted trends unless they were being reported in or prior to 1995. Releases have been decreasing both for "old" chemicals (Figure 14 and Table 13) and for all chemicals (Figure 13 and Table 12).

TABLE 13 1995-2001 TRI DATA SUMMARY ADJUSTED (IN POUNDS)

	1995	1996	1997	1998	1999	2000	2001
No. of facilities	73	75	73	69	66	67	65
No of Form A's	28	34	29	30	32	31	31
No of Form R's	221	212	237	240	231	241	235
No. of Chemicals	87	94	98	103	98	101	95
On-site Releases							
Air	4,466,247	3,569,898	2,973,704	4,286,623	3,246,226	3,178,779	3,066,083
Water	1,394,739	1,395,328	1,328,937	1,066,787	1,186,039	826,597	524,292
Land	28,678	42,409	317,243	347,129	278,319	194,448	145,055
Total Releases	5,889,664	5,007,635	4,619,884	5,700,539	4,710,584	4,199,824	3,735,429
Off-site Transfers							
POTW's	3,270,795	4,564,126	4,354,090	3,334,189	2,996,375	2,199,732	1,696,933
Recycle	17,127,835	10,054,483	10,544,518	11,963,716	9,295,315	8,454,588	8,719,955
Energy Recovery	2,427,102	1,173,331	1,663,440	1,491,543	1,389,936	2,539,369	2,642,626
Treatment	897,090	1,277,004	675,561	611,696	894,822	899,534	172,946
Disposal	2,767,339	2,905,928	4,010,594	3,719,902	2,985,340	3,471,837	3,572,381
Total Transfers	26,490,161	19,974,872	21,248,203	21,121,046	17,561,788	17,565,060	16,804,841
On-site Waste Mgmt.							
Recycle	29,100,208	29,882,121	32,996,062	34,549,050	32,671,856	31,188,654	24,133,520
Energy Recovery	332,834	219,184	19,255,280	16,155,665	22,981,591	29,095,220	25,863,740
Treatment	55,811,179	51,424,487	68,575,887	67,199,660	69,149,944	63,832,520	40,062,567
Total on-site Mgmt.	85,244,221	81,525,792	120,827,229	117,904,375	124,803,391	124,116,394	90,059,827
Total Waste	117,624,046	106,508,299	146,695,316	144,725,960	147,075,763	145,881,278	110,600,097

ADJUSTED FOR CHANGES IN REPORTING REQUIREMENTS SOURCE: DNREC 2001 DATABASE, MARCH 1,2003

Table 13 shows the adjusted amounts of TRI chemicals in all categories that were reported in 1995-2001. This table is adjusted to show only those facilities and chemicals that were reportable in 1995 and later. The following trends for 1995-2001, in addition to Figure 14 above, will be based on this data. Overall, on-site releases decreased 11.1% from 2000, following a 10.8% decrease in 1999-2000. Since 1995, on-site releases have decreased 36.6%.

Two facilities ceased operations in 2002; Metachem and Nanticoke Homes. Both were in operation in 2001, but did not file their 2001 reports due in 2002 because of their closures. Their on-site releases for 2000 totaled 116,000 pounds, so the 2001 data might have been higher by approximately that amount.

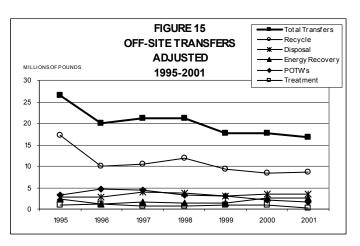


Significant reported changes in 2001 include reports from Motiva of decreases in vanadium compounds (-273,000 pounds), methyl tert-butyl ether (-207,000 pounds), nickel compounds (-101,000 pounds), and increases in sulfuric acid (+230,000 pounds) and hydrochloric acid (+137,000 pounds), a net decrease of 240,000 pounds. Other facilities reporting significant changes are Sunoco: 80,000 pounds increase in releases from three tanks newly reported in 2001, DuPont Seaford: -292,000 pounds (69%) decrease in nitrate compounds, Townsends: -178,000 pounds decrease in n-hexane releases due to taking their Millsboro extraction plant out of operation. These changes are balanced by other, smaller increases and decreases from other facilities.

Off-Site Transfers 1995-2001

An Off-site transfer is a transfer of toxic chemical in wastes to a facility that is physically separate from the reporting facility. Chemicals are reported as transferred to off-site facilities when they are moved away from the reporting facility for the purposes of transfer to a POTW, recycling, energy recovery, treatment, or disposal. Although the amounts off-site transfers may be of less immediate concern than on-site releases, they still represent toxic chemicals in wastes that must be ultimately accounted for. As noted on page 29 and Table 13 on page 34, the amounts transferred off-site are larger than the on-site releases by over a factor of 2. Figure 10 on page 28 and Figure 15 show the relative amounts of TRI chemicals in wastes transferred off site and the trend in recent years. Again, the amount of chemicals reported in this time period is trending down. As noted in prior analysis on page 29, over half of the off-site transfers are to recycling operations.

Although the trend in Figure 15 is driven largely by the trend in amounts sent to recycle, the overall trend for off-site transfers was down from 2000 by 4% (760,000 pounds) in 2001 even though the recycle trend was up slightly, by 265,000 pounds. Smaller increases were seen in energy recovery and disposal, but the increase in these amounts was more than offset by decreases in transfers to POTW's (503,000 pounds) and to treatment Total (727,000)pounds). off-site transfers have decreased by 37% since

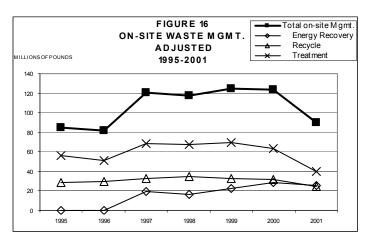


1995. Reports of significant changes came from: Ciba Specialty Chemicals, decrease in methanol (-1,195,000 pounds) resulting from changes in all transfers except disposal, Daimler Chrysler, decreases in certain glycol ethers, ethylbenzene, methyl isobutyl ketone, nitrate compounds, and xylene, (-182,000 pounds in total) resulting from changes in all transfers, and offset by increases from Citisteel, zinc compounds (+171,000 pounds) sent to recycle, General Motors, Xylene (+104,000 pounds) sent to energy recovery instead of recycle, and certain glycol ethers (+21,000 pounds) sent to POTW and treatment, and Sunoco, reporting for the first time toluene (101,000 pounds), benzene (92,000 pounds), and xylene (51,000 pounds), all sent to POTW and treatment. Again, no reports were filed for Metachem. Their 2001 off-site transfers amounted to 383,000 pounds in 2000. These changes are balanced by other, smaller increases and decreases from other facilities. In some facilities, wastes were managed on-site instead of being sent off-site for processing.



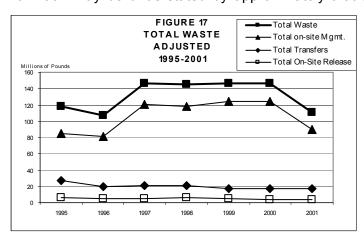
On-site Waste Management 1995-2001

On-site waste management is the processing of chemicals in wastes that do not leave the site of the reporting facility. Chemicals are reported as managed on-site when they are recycled, recovered for energy, or treated. Although these amounts represent a loss of finished product to the facility as waste, possible loss of product and/or raw material, and a burden for the cost of waste management, they are not as much a threat to the environment as the other categories since these amounts are managed on-site. As with many chemical wastes, there is the risk that they may be released accidentally to the environment.



On-site treatment is classified by 64 different types, recycling by 16 types, and energy recovery by 4 types. The totals of these three categories of onsite management are shown in Figure The total amount of waste managed on-site in 2001 was down 34 million pounds (27%) from 2000. categories decreased. Decreases ranged from 11% for energy recovery to 37% for treatment. Significant reductions occurred for: DuPont Edge Moor - hydrochloric acid (-7,753,000 pounds) and chlorine (-1.069.000)

pounds), both being treated on-site, MacDermid – methyl ethyl ketone (-1,175,000 pounds), reduction in amount sent to energy recovery, Motiva – formaldehyde (-7,500,000 pounds), now below reporting threshold, methanol (-1,300,000 pounds) and toluene (-1,000,000 pounds), reductions in amounts sent to energy recovery and treatment, and acetaldehyde (-710,000 pounds), now below the reporting threshold. Significant increases in on-site waste management occurred for Noramco – dichloromethane (1,200,000 pounds) sent to recycle, and Motiva – ammonia (4,900,000 pounds), sent to energy recovery. Again, the impact of Metachem was not known for 2001. Metachem reported 993,000 pounds managed on-site for 2000, so the results for 2001 may be understated by approximately that amount. Other reductions and increases



making up the 34 million pound reduction for 2001 in on-site waste management were smaller. Total pounds for on-site waste management have increased by 6% since 1995.

Total Waste 1995-2001

Figure 17 shows totals of the three waste categories taken from the totals in figures 14, 15, and 16, and their grand total. This grand total is largely driven by on-site waste management. Pounds for total waste have decreased by 24% since 2000 and 6% since 1995.



On-Site Releases 1998-2001

The second set of trends is for the 1998-2001 time period. New industry segments added in 1998 that were excluded in the 1995-2001 trends are included here. Because of the inclusion of additional facilities and chemicals, these totals in Table 14 are higher than those in table 13. The trend for on-site releases, adjusted for new facilities and chemicals added after 1998 is

shown in Figure 18. Again, as in the prior on-site trend (Figure 14), the trend is generally down. Although there was an 11% increase in 2000, there has been a decrease of 33% in on-site releases over the 1998-2001 time period, and an 18% decrease from 2000-2001. In addition to the facility notes on pages 35-37 about how wastes mav have changed this vear, additional notes facilities and chemicals added in 1998 are: Indian Generating River Station reduced acid gasses (hydrochloric. hvdrogen fluoride. sulfuric) bν

and sulfuric) by Source: DN 703,000 pounds (27%) and overall releases by 608,000 pounds (20%), and Edge Moor/Hay road Power Plant reduced acid gases by 145,000 pounds. Generally, changes in power generating facility acid gas releases are affected by changes in types of fuel (coal, oil, or gas) and the demand for electrical

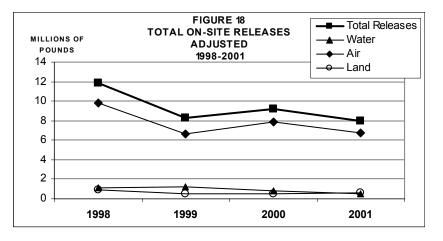
power.

TABLE 14
1998-2001 TRI DATA SUMMARY
ADJUSTED
(IN POUNDS)

	1998	1999	2000	2001
No. of facilities	79	76	76	77
No. of Form A's	70	72	61	57
No. of Form R's	271	254	278	268
No. of Chemicals	105	101	102	94
On-site Releases				
Air	9,787,574	6,651,166	7,826,590	6,750,278
Water	1,126,527	1,197,861	864,760	558,663
Land	937,708	462,579	500,395	637,024
Total On-Site Releases	11,851,809	8,311,606	9,191,745	7,945,965
Off-site Transfers				
POTW's	3,334,297	2,996,401	2,199,804	1,696,995
Recycle	11,963,926	9,295,315	8,491,112	8,460,096
Energy Recovery	1,491,543	1,389,936	2,539,369	2,642,626
Treatment	611,996	894,822	901,603	172,946
Disposal	3,983,506	3,056,466	3,710,399	3,774,642
Total Off-site Transfers	21,385,268	17,632,940	17,842,287	16,747,305
On-site Waste Mgmt.				
Recycle	34,549,050	32,671,856	31,188,654	24,133,520
Energy Recovery	16,155,665	22,981,591	29,095,220	25,863,740
Treatment	68,126,327	69,501,151	64,403,879	40,675,602
Total On-Site Mgmt.	118,831,042	125,154,598	124,687,753	90,672,862
Total Waste	152,068,119	151,099,144	151,721,785	115,366,132

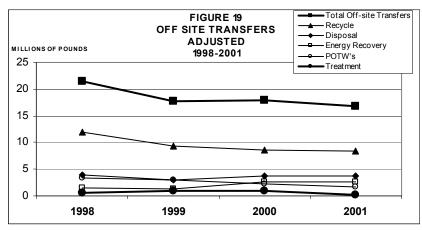
ADJUSTED FOR CHANGES IN REPORTING REQUIREMENTS

Source: DNREC Database, March 1, 2003





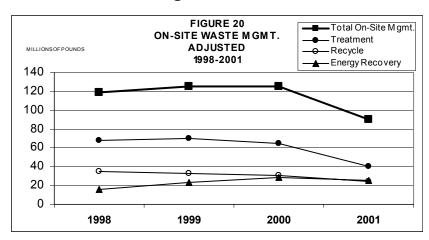
Off-Site Transfers 1998-2001

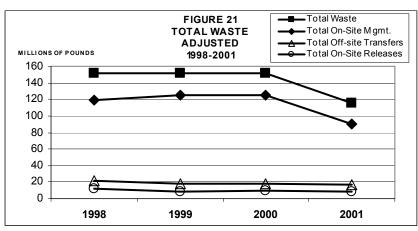


Off-site transfers were also characterized by declining reported amounts of toxic chemicals in wastes for 2001. Figure 19 and table 14 show the amounts transferred offadjusted for reporting after 1998. With a decline of 6% in 2001 and 22% since 1998. the reductions were not as great as on-site releases, but were a positive step. In addition to the facility notes on pages 35-

36 about how off-site transfers may have changed this year, an additional note for facilities and chemicals added in 1998 is: Edge Moor/Hay Road Power Plant - small reductions in several metallic compounds (lead, chromium, etc.), totaling 73,000 pounds.

On-Site Waste Management 1998-2001





trend of on-site The management of TRI chemicals in waste shows a strong downward trend in 2001 due to declines in all three waste management activities as shown in Table 14 and Figure 20. these figures include the newly added industry groups that started reporting 1998. There are no changes of note for these new facilities in addition to the previously noted 34 million pound decline in 2001 and the facility notes on page 36.

Total Waste 1998-2001

The sum of On-Site Releases, Off-Site Transfers, and On-site Waste Mgmt., is shown in figure 21. The 2000-2001 trend is down by 24%, and the 1998-2001 trend is also down by 24%.



Carcinogens Trend, 1995-2001

TABLE 15 1995-2001 CARCINOGENS ON-SITE RELEASES, NOT ADJUSTED

Although the number of Carcinogen reports is at an all-time high of 100 due to the increase in lead and lead compounds reporting, the trend of carcinogen releases since 1995 has generally been down. Thirty-two chemicals were reported which were in one of the carcinogen groups. Carcinogens are classified into three groups by IARC, the International Agency for Research on Cancer: Group 1 - Known, Group 2A - Probable, and Group 2B -Possible. Α list carcinogens reported in Delaware is provided on page 4. On-site releases of

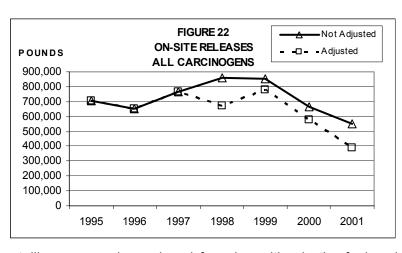
0.00.00.00.00.00.00.00.00.00.00.00.00.0							
	1995	1996	1997	1998	1999	2000	2001
KNOWN (Group 1)							
AIR	253,818	225,184	192,099	209,094	219,970	209,828	209,295
WATER	596	201	6,917	10,246	3,048	4,395	9,114
LAND	1,791	331	286,041	363,793	306,630	258,008	169,197
KNOWN TOTAL	256,205	225,716	485,057	583,133	529,648	472,231	387,606
PROBABLE (group 2	A)						
AIR	113,482	78,491	55,274	53,558	139,293	55,418	44,326
WATER	0	0	0	0	0	0	0
LAND	0	0	0	0	0	0	0
PROBABLE TOTAL	113,482	78,491	55,274	53,558	139,293	55,418	44,326
POSSIBLE (Group 2)	B)						
AIR	331,904	344,888	223,518	167,420	186,506	135,946	91,851
WATER	359	351	196	1,175	290	271	4,873
LAND	0	5	2,550	51,625	142	40	21,607
POSSIBLE TOTAL	332,263	345,244	226,264	220,220	186,938	136,257	118,331
TOTAL AIR	699,204	648,563	470,891	430,072	545,769	401,192	345,472
TOAL WATER	955	552	7,113	11,421	3,338	4,666	13,987
TOTAL LAND	1,791	336	288,591	415,418	306,772	258,048	190,804
GRAND TOTAL	701,950	649,451	766,595	856,911	855,879	663,906	550,263
Not adusted for changes in rep	ortina requireme	ents					

Not adusted for changes in reporting requirements

Source: DNREC Database, March 1, 2003

all carcinogens comprise 6.6% of all on-site releases in 2001, and have decreased 17% this year and 35% since their peak in 1998 when new facilities were added. Table 15 provides the individual data and overall totals for each of the IARC classes of carcinogens, and Figure 22 illustrates the trend graphically.

As with the prior trends. adjustments must be made for changes in reporting requirements in this time period, and the trends of both unadjusted and adjusted values are shown in Figure 22. Table 15 contains only the unadjusted values. Chemicals and facilities required to report only during a portion of the time period have been excluded for the entire time period for "Adjusted" trend. These adjustments generally involve the power generating and ore



processing industries and include metallic compounds produced from impurities in the fuel and raw materials used by these facilities. These facilities were required to start reporting in 1998. Adjustments occurring in this time period affected the air, water, and land release amounts. New reports for lead and lead compounds at their lower thresholds in 2001 accounted for 28,000 pounds of exclusions in 2001. Prior years' lead and lead compounds reports under the higher thresholds were not excluded. Table 3 on page 4 shows the number of facility reports for each



IARC-classified chemical. On-site releases of all Carcinogens decreased by 22% since 1995 and by 17% since 2000.

As before, in *Limitations of TRI Data* on Page 6, caution is urged when using this data, as THIS DATA DOES NOT INDICATE AMOUNT OF HUMAN EXPOSURE.

Known Carcinogens

Until 2001, the values for the 1997-2000 known carcinogen on-site releases were largely influenced by land releases and were due to nickel compounds at Motiva. Motiva released 283,000 pounds in 1997, 250,000 in 1998, 249,000 in 1999, 151,000 in 2000, and 39,000 pounds in 2001. Chromium compounds released by Motiva and the Indian River Power Plant have now displaced Nickel compounds for the top spot in Known Carcinogen land releases. Air releases of known carcinogens have remained relatively steady and are now again in the majority, with 62% of air releases for known carcinogens being vinyl chloride. Vinyl chloride, #1 in releases to air, constitutes over 37% of all carcinogen category air releases and 23% of all carcinogen category on-site releases for air, water, and land in 2001. Formosa Plastics reported 98,000 pounds of vinyl chloride released, and Kaneka reported 32,000 pounds. Nickel compounds were #2 in releases to air. Motiva and the Indian River Power plant reported 98 % of these nickel compound releases. Sunoco and Motiva reported over 98% of the on-site benzene release to air, the third highest chemical released to air in the known carcinogen category. Benzene made up 15% of the known carcinogen air releases, 9% of the air release for all carcinogen categories, and 6% of all carcinogen category on-site releases for air, water, and land in 2001. Total benzene reports have declined from 58,000 pounds in 1995 to 32,000 pounds in 2001. Metachem reported 11,000 pounds of benzene released to air in 2000 but did not file reports in 2001, while Sunoco reported 12,000 pounds benzene released to air for the first time in 2001. Water releases on-site of known carcinogens are 2.4% of the known carcinogen total, mostly benzene and chromium and nickel compounds.

Probable Carcinogens

All Probable class carcinogens were released to air during this time period. The largest air release contributors to Probable carcinogens air releases were 1,3,-butadiene produced by Dow Reichhold and trichloroethylene produced by Camdel Metals. They combined for 86% of the Probable class releases. The trend for 1,3,-butadiene is down, now at 22,000 pounds from a high of 72,000 pounds in 1995. Trichloroethylene release has declined by 45%, from 29,000 pounds in 1995 to 16,000 pounds in 2001. The high number (139,923) in Table 15 for the 1999 Probable Carcinogen air release was due to an 83,000-pound reported release of formaldehyde from Motiva.

Possible Carcinogens

Styrene, two-thirds of which is released by Justin Tanks, is now the predominant amount of reported air release for this class. Styrene accounts for half of the air release for this class, and although the Justin Tanks' trend has been slightly down, other reporters show increased releases, and overall, styrene releases have increased by 14% over the 1995-2001 time period.

Metachem, no longer in operation, had been contributing 45-50,000 pounds of carcinogens in all classes each year, or about 6-7% of the total carcinogen releases of 650-850,000 pounds.



FOR FURTHER INFORMATION

Access to the TRI Files - DNREC is responsible for collecting, processing, and distributing information submitted by Delaware facilities under the TRI program. This 2001 TRI report may be viewed at: www2.state.de.us/serc/reports.htm. Additional information not contained in this report is available to the public through the EPCRA Reporting Program located within DNREC. A searchable database is located at: http://www2.state.de.us/serc/search/index.htm. The reports submitted by facilities are available for review through the Freedom of Information Act process from DNREC's Air Quality Management Office located at 156 South State Street in Dover. Custom reports can also be generated from the database. For information on placing a request, call the TRI Coordinator at (302) 739-4791 during business hours. An on-line FOIA application is also available at: http://www.dnrec.state.de.us/air/aqm_page/foia.htm.

<u>Chemical Data Fact Sheets</u> - A two-page fact sheet is available for most TRI chemicals reported in Delaware and contains information on chemical characteristics, health hazards, and ecological effects. These fact sheets were prepared by the EPCRA Reporting Program from information obtained through EPA's more lengthy TRI chemical fact sheets. The two-page fact sheets are available upon request. Additional TRI chemical information is available at: www.epa.gov/triinter/chemical/index.htm

EPA's TRI Home Page - The TRI home page provides information on the many facets of the TRI program at EPA, including an Executive Summary, Q&A's, a link now to the 2000 TRI data, and later to 2001 data, a current list of reportable chemicals, reporting forms, state and federal program contacts, and various guidance documents available for downloading. This website has many links to other EPA and non-EPA sites associated with TRI. www.epa.gov/tri/

<u>Toxics Release Inventory Public Data Release</u> - EPA's annual TRI report. It covers information nationwide and provides a good perspective on how Delaware compares to other states. The latest version of this report is available for review at the DNREC office at 156 South State Street in Dover or can be obtained by calling the federal EPCRA Information Hotline at 1-800-535-0202. www.epa.gov/tri/tridata/tri00/index.htm

<u>Envirofacts Electronic warehouse</u> - Envirofacts is an EPA-developed website that provides public access to multiple environmental databases, including TRI. Links can be made to data about hazardous waste, water permits, drinking water, Superfund sites, and more. On-line queries allow the user to retrieve data and create reports, as well as generate maps. www.epa.gov/enviro

<u>Right-to-know Network</u> Searchable nationwide TRI data is available through RTKNet. The RTKNet was established by two non-profit organizations to provide access to TRI and chemical data, link TRI with other environmental data, and exchange information among public interest groups. <u>www.rtk.net</u>

Delaware Public Health Cancer Rates and Causes

This site provides data and answers to many cancer-related questions. http://www.delaware-epi.org/whdo.htm



The Office of Pollution Prevention & Toxics is a part of the EPA that:

- Promotes pollution prevention as the guiding principle for controlling industrial pollution;
- Promotes safer chemicals through a combination of regulatory and voluntary efforts;
- Promotes risk reduction so as to minimize exposure to existing substances such as lead, asbestos, dioxin, and polychlorinated biphenyls; and,
- Promotes public understanding of risks by providing understandable, accessible and complete information on chemical risks to the broadest audience possible.

It is also a link to *Risk-Screening Environmental Indicators*. This model was developed by EPA's Office of Pollution Prevention & Toxics as a risk screening tool that provides a relative comparison of TRI releases. This application is available on CD-ROM or through the Internet. Both of these are available through: www.epa.gov/opptintr

<u>Delaware's Pollution Prevention Program</u> can be accessed at: http://www.dnrec.state.de.us/dnrec2000/pollutionprevention.asp

Environmental Defense Fund Scorecard - The EDF Scorecard combines scientific, geographic, technical, and legal information from many databases (with emphasis on TRI) to enable users to produce detailed local reports on toxic chemical pollution. Chemical profiles and a map generator are also available through the Scorecard. www.scorecard.org

2001 Delaware Air Quality Report - The annual air quality report is prepared by the Air Surveillance Branch in the Air Quality Management Section of DNREC. This report presents data gathered from a statewide network of air monitoring stations, and includes analyses, trends, and other information regarding Delaware's ambient air quality. For a copy of the report, or for more information, please call (302) 323-4542. This report is available on-line at: www.dnrec.state.de.us/air/aqm page/reports.htm The EPA site for additional air quality information is: https://www.epa.gov/oar/oagps/publicat.html

<u>Delaware's Department Of Natural Resources and Environmental Control</u> has a variety of environmental information available at: www.dnrec.state.de.us/environmental Control</u> has a variety of environmental information available at: www.dnrec.state.de.us/environmental Control
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Questions or comments regarding TRI are welcome. Please direct questions, comments, or requests to:

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EPCRA Reporting Program
Air Quality Management Section
Division of Air and Waste Management, DNREC
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